

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A computer-implemented method to search for data responsive to first and second query concepts, comprising:

receiving a first set of expanded results generated from one or more results of a first query concept by utilizing one or more data sources;

receiving a second set of expanded results generated from one or more results of a second query concept by utilizing the one or more data sources;

determining an intersection set of documents from the first and second sets of expanded results, wherein a relationship is determined between the first and second query concepts from the intersecting set of documents; and

displaying one of: the relationship, the responsive data, wherein the expanded results are generated by:

defining a first set of documents relevant to the query concept, ~~the first set of documents being a subset of a collection set of documents;~~

~~building a first histogram of features from the first set of documents; and~~

~~selecting features for an expanded feature set by comparing the first histogram of features with a second histogram of features from the collection set of documents, wherein a feedback scoring function is applied to results generated from the expanded feature set and the feedback scoring function assigns a fixed score to each feature and where feature is assigned different fixed scores.~~

2. (Previously Amended) The method of claim 1 wherein the relationship between the first and second query concepts is determined for each document those concepts related to the document from a larger concept set, the larger concept set including expansions of the first query concept and the. second query concept.

3. (Original) The method of claim 1 wherein a first relevance score is assigned to the first set of expanded results and a second relevance score is assigned to the second set of

expanded results and wherein a composite relevance score is assigned to the intersection set of documents.

4. (Previously Amended) The method of claim 3 wherein a composite score is assigned by multiplying the first and second relevance scores.

5. (Original) The method of claim 1 wherein the documents are filtered by a relevance score.

6. (Original). The method of claim 1, wherein the expanded results are generated by:
defining a first set of documents relevant to the query concept, the first set of documents being a subset of a collection set of documents;
building a first histogram of features from the first set of documents; and
selecting features for an expanded feature set by comparing the first histogram of features with a second histogram of features from the collection set of documents.

7. (Previously Amended) The method of claim 1 wherein the features in the second histogram are a baseline expansion feature set and the features for the expanded feature set are selected by removing features from the baseline expansion feature set based on how often the features appear in the first histogram.

8. (Original) The method of claim 7 wherein the baseline expansion feature set is generated by training on a random data sample.

9. (Previously Amended) The method of claim 1 wherein the expanded feature set is ranked by expected entropy loss.

10. (Previously Amended) The method of claim 1 wherein concept constraints are applied to the expanded feature set.

11. (Original) The method of claim 6 wherein a feedback scoring function is applied to results generated from the expanded feature set.

12. (Original) The method of claim 11 wherein the feedback scoring function assigns a fixed score to each feature and where feature can be assigned different fixed scores.

13. (Currently Amended) A computer-implemented method for automatic query expansion comprising:

defining a first set of documents relevant to a first query concept, the first set of documents being a subset of a collection set of documents;

building a first histogram of features from the first set of documents; and

selecting features for an expanded feature set by comparing the first histogram of features with a second histogram of features from the collection set of documents; and

displaying the query expansion, ~~wherein a feedback scoring function is applied to results generated from the expanded feature set, and wherein the feedback scoring function assigns a fixed score to each feature and wherein the feature is assigned different fixed scores.~~

14. (Original) The method of claim 13 wherein the features in the second histogram are a baseline expansion feature set and the features for the expanded feature set are selected by removing features from the baseline expansion feature set based on how often the features appear in the first histogram.

15. (Original) The method of claim 14 wherein the baseline expansion feature set is generated by training on a random data sample.

16. (Original) The method of claim 13 wherein the expanded feature set is ranked by expected entropy loss.

17. (Original) The method of claim 13 wherein concept constraints are applied to the expanded feature set.

18. (Original). The method of claim 13 wherein a feedback scoring function is applied to results generated from the expanded feature set.

19. (Original). The method of claim 18 wherein the feedback scoring function assigns a fixed score to each feature and where feature can be assigned different fixed scores.

20. (Currently Amended) A computer-readable medium storing instructions to search for data responsive to first and second query concepts, the medium comprising instructions to perform:

- receiving a first set of expanded results generated from one or more results of a first query concept by utilizing one or more data sources;

- receiving a second set of expanded results generated from one or more results of a second query concept by utilizing the one or more data sources;

- determining an intersection set of documents from the first and second sets of expanded results, wherein a relationship is determined between the first and second query concepts from the intersecting set of documents; and

- displaying one of: the relationship, the responsive data;

- ~~defining a first set of documents relevant to the query concept, the first set of documents being a subset of a collection set of documents;~~

- ~~building a first histogram of features from the first set of documents; and~~

- ~~selecting features for an expanded feature set by comparing the first histogram of features with a second histogram of features from the collection set of documents, wherein a feedback scoring function is applied to results generated from the expanded feature set and the feedback scoring function assigns a fixed score to each feature and where feature is assigned different fixed scores.~~

21. (Previously Amended) The computer-readable medium of claim 20 wherein the relationship between the first and second query concepts is determined for each document those concepts related to the document from a larger concept set, the larger concept set including expansions of the first query concept and the second query concept.

22. (Original) The computer-readable medium of claim 20 wherein a first relevance score is assigned to the first set of expanded results and a second relevance score is assigned to the second set of expanded results and wherein a composite relevance score is assigned to the intersection set of documents.

23. (Original) The computer-readable medium of claim 20 wherein the expanded results are generated by:

- defining a first set of documents relevant to the query concept, the first set of documents being a subset of a collection set of documents;

- building a first histogram of features from the first set of documents; and selecting features for an expanded feature set by comparing the first histogram of features with a second histogram of features from the collection set of documents.

24. (Currently Amended) A computer-readable medium storing instructions for to perform automatic query expansion, the medium comprising instructions for:

- defining a first set of documents relevant to a first query concept, the first set of documents being a subset of a collection set of documents;

- building a first histogram of features from the first set of documents;

- selecting features for an expanded feature set by comparing the first histogram of features with a second histogram of features from the collection set of documents; and

- displaying the query expansion, ~~wherein a feedback scoring function is applied to results generated from the expanded feature set, and wherein the feedback scoring function assigns a fixed score to each feature and wherein the feature is assigned different fixed scores.~~

25. (Original) The computer-readable medium of claim 24 wherein the features in the second histogram are a baseline expansion feature set and the features for the expanded feature set are selected by removing features from the baseline expansion feature set based on how often the features appear in the first histogram.

26. (Original) The computer-readable medium of claim 25 wherein the baseline expansion feature set is generated by training on a random data sample.
27. (Original) The computer-readable medium of claim 24 wherein the expanded feature set is ranked by expected entropy loss.
28. (Original) The computer-readable medium of claim 24 wherein concept constraints are applied to the expanded feature set. ,
29. (Original) The computer-readable medium of claim 29 wherein a feedback scoring function is applied to results generated from the expanded feature set.
30. (Original). The computer-readable medium of claim 29 wherein the feedback scoring function assigns a fixed score to each feature and where feature can be assigned different fixed scores.